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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/423,948	04/14/2000	LEONID BERESNEV	2345/103	7349

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EXAMINER

WANG, GEORGE Y

ART UNIT	PAPER NUMBER
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2882

DATE MAILED: 07/29/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/423,948

Applicant(s)

BERESNEV ET AL.

Examiner

George Y. Wang

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 6-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6-10 is/are rejected.
- 7) ☒ Claim(s) 7-10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 April 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All   b) ☐ Some \*   c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

1. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

### ***Specification***

2. The abstract of the disclosure is objected to because it is too long. The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. Correction is required. See MPEP § 608.01(b).

### ***Claim Objections***

3. Claims 7-10 are objected to because they are improperly dependent upon claim 5, which has been cancelled in Applicant's Pre-amendment. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2882

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 6-8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshizumi (U.S. Patent No. 4,611,916) in view of De Lang (U.S. Patent No. 3,635,552). (Note: Rejections are based on examiner's assumption that dependency is upon independent claim 6).

6. Regarding claims 6-8, Yoshizumi discloses a tunable interferometer (fig. 1) for measuring an optical surface having a light source (fig. 1, ref. 1), a reference surface reflecting the first interference beam, a test object (fig. 1, ref. 7) reflecting a second interference beam, a beam splitter where both beams strike, a polarizer and two  $\lambda/4$  retardation plates (fig. 1, ref. 4, 5, 23) that polarizes the first and second interference

beam before the test object and reference and before the photodetectors with polarizations states that differ from each other

However, Yoshizumi fails to specifically disclose a rotatable linear analyzer positioned at the output of the interferometer having a variable polarization state and capable of tuning the interferometer as a function of the polarized beams.

De Lang discloses an optical interferometer with a rotatable linear analyzer (fig. 1, ref. 10) positioned at the output of the interferometer having a variable polarization state and capable of tuning the interferometer as a function of the polarized beams.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have positioned at the output of the interferometer, a rotatable linear analyzer (abstract) having a variable polarization state and capable of tuning the interferometer as a function of the polarized beams since one would motivated to reduce time variance that usually results from generation of phase interference patterns (col. 1, lines 67-75). Furthermore, a rotatable linear analyzer would reduce the number of adjustments, for example of brightness patterns, which have to take successfully in time (col. 1, lines 71-75).

7. As to claim 10, Yoshizumi and De Lang disclose a tunable interferometer as recited above. However, the references fail to specifically teach an analyzer that is physically separate from the interferometer.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use an analyzer that is physically separate from the

interferometer since one would be motivated by cost efficiency. The reduction of an integrated analyzer would also facilitate the use and transportation of the interferometer.

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshizumi (U.S. Patent No. 4,611,916) in view of Sharp et al. (U.S. Patent No. 5,627,666, from hereinafter "Sharp"). (Note: Rejection is based on examiner's assumption that dependency is upon independent claim 6).

Yoshizumi discloses a tunable interferometer as recited above. However, the reference fails to specifically teach an analyzer having an electrically tunable liquid-crystal element with linear polarizer.

Sharp discloses an optical interferometer with phase modulator having an analyzer with an electrically tunable liquid-crystal element with linear polarizer (fig. 1, ref. 40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used an analyzer with an electrically tunable liquid-crystal element with linear polarizer since one would be motivated by increased tuning range (col. 2, lines 35-46). Because liquid cells have optic axes, which are rotatable upon application of an electric field, the cells provide discrete switching between several rotatable orientations, even in opposite directions (col. 2, lines 35-46), permitting a higher level of reliability and flexibility.


### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Y. Wang whose telephone number is 703-305-7242. The examiner can normally be reached on M-F, 8 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 703-305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

gw  
July 12, 2002

  
ROBERT H. KIM  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800